

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422
 Patentee : Dah-Ben Liang et al.
 Patent No. : 5,791,422
 Patent Issue Date : August 11, 1998
 Title : ROCK BIT WITH HARDFACING MATERIAL
 INCORPORATING SPHERICAL CAST
 CARBIDE PARTICLES
 Docket No. : 36912/CM/S61

POWER OF ATTORNEY

Assistant Commissioner for Patents
 Washington, D.C. 20231

Post Office Box 7068
 Pasadena, CA 91109-7068

Commissioner:

The undersigned inventors of the accompanying reissue application for the reissue of Letters Patent No. 5,791,422, granted to them on August 11, 1998, entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, of which Smith International, Inc., is now sole owner by assignment, and on whose behalf and with whose assent the accompanying application is made, hereby offer to surrender said Letters Patent.

As the named inventors, we hereby appoint:

R. W. Johnston	(17,968)	Edward R. Schwartz	(31,135)	Molly A. Holman	(40,022)
D. Bruce Prout	(20,958)	John D. Carpenter	(34,133)	Lucinda G. Auciello	(42,270)
Hayden A. Carney	(22,653)	David A. Plumley	(37,208)	Norman E. Carte	(30,455)
Richard J. Ward, Jr.	(24,187)	Wesley W. Monroe	(39,778)	Joel A. Kauth	(41,886)
Russell R. Palmer, Jr.	(22,994)	Grant T. Langton	(39,739)	Patrick Y. Ikehara	(42,681)
LeRoy T. Rahn	(20,356)	Constantine Marantidis	(39,759)	Mark Garscia	(31,953)
Richard D. Seibel	(22,134)	John W. Eldredge	(37,613)	Gary J. Nelson	(44,257)
Walter G. Maxwell	(25,355)	Gregory S. Lampert	(35,581)	Raymond R. Tabandeh	(43,945)
William P. Christie	(29,371)	Craig A. Gelfound	(41,032)	Phuong-Quan Hoang	(41,839)
David A. Dillard	(30,831)	Syed A. Hasan	(41,057)	Jun-Young E. Jeon	(43,693)
Thomas J. Daly	(32,213)	Kathleen M. Olster	(42,052)	Kathy Mojibi	(41,409)
Vincent G. Gioia	(19,959)	Daniel M. Cavanagh	(41,661)		

doing business as the law firm CHRISTIE, PARKER & HALE, LLP, telephone 626/795-9900, as principal attorneys with power to appoint associate attorneys, to prosecute this application and

AUG. 9. 2000, 11:16AM

TO-912812000970

FROM-

NO. 5957 P. 3

T-094 P.10/19 F-535

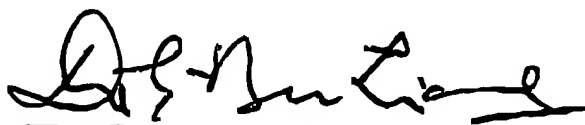
Docket No. 36912/CM/S61

any subsequent application based on the disclosure of this application, and to transact all business in the Patent and Trademark Office connected with this application and any subsequent application.

The authority under this Power of Attorney of each person named above shall automatically terminate and be revoked upon such person ceasing to be a member or associate of or of counsel to that law firm.

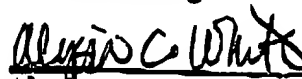
Please address all correspondence to **CHRISTIE, PARKER & HALE, LLP, P.O. Box 7068, Pasadena, California 91109-7068.**

Dated: Aug 9, 2000



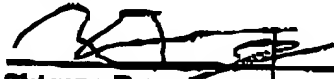
Dah-Ben Liang

Dated: Aug. 9, 2000



Alysa C. White

Dated: Aug. 9, 2000



Zhigang Fang

Dated: Aug 9, 2000



Jijian Albert Sue

CM/mac

MAC PAS260597.1-0/00 3:48 PM

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

This paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" under 37 CFR § 1.10, Mailing Label No. EL521383879US.

For : Reissue of U.S. Patent No. 5,791,422
Patentee : Dah-Ben Liang, et al.
Patent No. : 5,791,422
Patent Issue Date : August 11, 1998
Title : ROCK BIT WITH HARDFACING MATERIAL
INCORPORATING SPHERICAL CAST
CARBIDE PARTICLES
Docket No. : 36912/CM/S61

STATEMENT UNDER 37 CFR 3.73(b)

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068
August 8, 2000

Commissioner:

Smith International, Inc., a Delaware corporation, states that it is the assignee of the entire right, title, and interest in U.S. Patent No. 5,791,422 entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES issued August 11, 1998, by virtue of an assignment to Smith International, Inc., as assignee of Dah-Ben Liang, Alysia C. White, Zhigang Fang, Jiinjen Albert Sue. Title in the name of assignee was recorded on Reel 8607, Frames 0609-0613. A copy of the recorded assignment to Smith International, Inc. from Dah-Ben Liang, Alysia C. White, Zhigang Fang, Jiinjen Albert Sue is enclosed herein.

Respectfully submitted,

By 

Wesley T. Noah, Esq.
Chief Patent Counsel

Enclosures: Copy of Notice of Recordation of Assignment Document,
Recordation Form Cover Sheet and Assignment for
Application No. 08/815,745, filed March 12, 1997

MEE PAS266602.1-*8/8/00 6:04 PM

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422
Patentee : Dah Ben Liang, et al.
Patent No. : 5,791,422
Patent Issue Date : August 11, 1998
Title : ROCK BIT WITH HARDFACING MATERIAL
INCORPORATING SPHERICAL CAST
CARBIDE PARTICLES

Docket No. : 36912/CM/S61

DECLARATION FOR REISSUE PATENT APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that I reside at the address listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising steel and filler which comprises 10 to 100 percent by weight spherical cast tungsten carbide particles having a particle size less than 40 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to

Docket No. 36912/CM/S61

recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part.

I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated:

Dated: Aug. 9, 2000

Ans Lee Long

Dah-Ben Liang
27 Rustic View Court
The Woodlands, Texas 77381

CM/dlm

MAC PAS266580.1--8/8/00 3:34 PM

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422
Patentee : Dah Ben Liang, et al.
Patent No. : 5,791,422
Patent Issue Date : August 11, 1998
Title : ROCK BIT WITH HARDFACING MATERIAL
INCORPORATING SPHERICAL CAST
CARBIDE PARTICLES

Docket No. : 36912/CM/S61

DECLARATION FOR REISSUE PATENT APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that I reside at the address listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising steel and filler which comprises 10 to 100 percent by weight spherical cast tungsten carbide particles having a particle size less than 40 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to

Docket No. 36912/CM/S61

recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part.

I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated: Aug 9 2000Alycia C. White

Alycia C. White
4918 Pine Prairie 4607 Lake Village Drive
Kingwood, Texas 77345
Fulshear 77441

CM/mac

MAC PAS266615.1-8/8/00 3:39 PM

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422
Patentee : Dah Ben Liang, et al.
Patent No. : 5,791,422
Patent Issue Date : August 11, 1998
Title : ROCK BIT WITH HARDFACING MATERIAL
INCORPORATING SPHERICAL CAST
CARBIDE PARTICLES

Docket No. : 36912/CM/S61

DECLARATION FOR REISSUE PATENT APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that I reside at the address listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising steel and filler which comprises 10 to 100 percent by weight spherical cast tungsten carbide particles having a particle size less than 40 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to


Docket No. 36912/CM/S61

recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part.

I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated: Aug. 9, 2000


Zhigang Fang
230 South Crimson Clover Circle
The Woodlands, Texas 77381

CM/mac
MAC PAS366616,1 - 8/8/00 3:40 PM

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422
Patentee : Dah Ben Liang, et al.
Patent No. : 5,791,422
Patent Issue Date : August 11, 1998
Title : ROCK BIT WITH HARDFACING MATERIAL
INCORPORATING SPHERICAL CAST
CARBIDE PARTICLES

Docket No. : 36912/CM/S61

DECLARATION FOR REISSUE PATENT APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that I reside at the address listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising steel and filler which comprises 10 to 100 percent by weight spherical cast tungsten carbide particles having a particle size less than 40 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to


Docket No. 36912/CM/\$61

recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part.

I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated: August 9, 2000


Finjen Albert Sue
22 South Dragonwood Place
The Woodlands, Texas 77381

CM/mac
MAC PAS266617.1-0.8/140 3:01 PM

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422
Patentee : Dah-Ben Liang, et al.
Patent No. : 5,791,422
Patent Issue Date : August 11, 1998
Title : ROCK BIT WITH HARDFACING MATERIAL
INCORPORATING SPHERICAL CAST
CARBIDE PARTICLES
Docket No. : 36912/CM/S61

CONSENT OF ASSIGNEE

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068

Commissioner:

Smith International, Inc., assignee of the entire interest in U.S. Patent No. 5,791,422, entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, issued August 11, 1998, hereby consents to the Application for Reissue of this patent for the same invention on the accompanying specification and claims.

Smith International, Inc. hereby offers to surrender the original Letters Patent No. 5,791,422.

SMITH INTERNATIONAL, INC.

Dated: 8/1/00

By: Wesley T. Noah

Name: Wesley T. Noah

Title: Chief Patent Counsel

CM/dlm

MAC PAS266607.1-8/8/00 3:47 PM

**REISSUE APPLICATION BY THE ASSIGNEE,
OFFER TO SURRENDER PATENT****Docket No. 36912/CM/S61**

This is part of the application for a reissue patent based on the original patent identified below.

Name of Patentee(s) : Dah-Ben Liang, Alysia C. White, Zhigang Fang, Jiinjen Albert Sue
Patent Number : 5,791,422
Date Patent Issued : August 11, 1998
Title of Invention : ROCK BIT WITH HARDFACING MATERIAL INCORPORATING
SPHERICAL CAST CARBIDE PARTICLES

I offer to surrender the original patent.

 X A certificate under 37 CFR 3.73(b) is attached.

I am authorized to act on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application, any patent issued thereon, or any patent to which this declaration is directed.

SMITH INTERNATIONAL INC.

Date

8/10/00

Wesley T. Nogh
Wesley T. Nogh, Esq.
Chief Patent Counsel

MAC FAS266522.1-08/00 3:01 PM